

Undescribed Species of Crane-Flies from the Western United States and Canada (Dipt.: Tipulidae) Part X

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The preceding part under this title was published in *ENTOMOLOGICAL NEWS*, 59: 121-128, 1948. At this time I am describing various new species from Arizona, virtually all from the White Mountains in the Apache National Forest. From June 20 to 25, 1947, we were encamped on the South Fork of the Little Colorado River; where we enjoyed and profited greatly by the companionship of John and Grace Sperry. With the Sperrys we visited and collected at various places in the northern part of the White Mountains, particularly at and near Greer, Alpine and Coulter's Ranch, chiefly at altitudes between 8000 and 9000 feet. The types of the novelties are preserved in my collection of these flies.

Limnophila (*Phylidorea*) *semifacta* new species

Mesonotum black, sparsely pruinose; mesopleura black, the propleura and metapleura obscure yellow; antennae black throughout; femora black, the bases yellow; wings with a weak brown tinge, the margins a trifle darker than the disk; stigma oval, pale brown; abdomen yellow, the lateral portions darker; segment eight dark brown, forming a narrow ring; male hypopygium with the outer dististyle slender, unequally bidentate at tip; outer gonapophyses appearing as strong blackened blades, narrowed at tip into a strong spine.

♂. Length about 11 mm.; wing 10 mm.

Rostrum and palpi black. Antennae black throughout; basal flagellar segments a trifle produced on lower face, the outer segments more elongate; intermediate segments subequal in length to their verticils. Head uniformly gray.

Pronotum dark gray pruinose. Mesonotum black, sparsely pruinose, the humeral and lateral borders of the praescutum

restrictedly obscure brownish yellow; pseudosutural foveae brownish black; scutellum brown, the sides and the parascutella obscure yellow; mediotergite pruinose, pleurotergite brownish yellow. Pleura with the mesopleura brownish black, pruinose, the propleura and metapleura obscure yellow. Halteres with stem pale yellow, knob infuscated. Legs with the coxae and trochanters yellow; femora black, the bases yellow, involving about the proximal fourth; remainder of legs brownish black to black, the tibiae and basitarsi brownish black. Wings with a weak brownish tinge, the costal, apical and posterior regions a very little darker than the disk; stigma oval, pale brown; prearcular field brighter yellow; veins dark brown, yellow in the prearcular area. Venation: Sc_1 ending shortly before the fork of R_s , Sc_2 long, ending shortly beyond the fork of R_s , R_{2+3+4} a little longer than the basal section of vein R_5 ; $m-cu$ at or just before midlength of cell $1st M_2$.

Abdominal tergites obscure brownish yellow, darker laterally; sternites clearer yellow, similarly patterned; eighth segment darker brown to form a narrow subterminal ring; hypopygium obscure yellow. Male hypopygium with the tergite terminating in two slender lobes, directed caudad, separated by a much broader notch. Basistyle on mesal face produced into a microscopic tubercle. Outer dististyle a slender rod, blackened and unequally bidentate at apex, the smaller subterminal spine being on the outer margin. Inner dististyle with the basal half stout, the outer half abruptly narrowed into a slender lobe. Phallosome with the aedeagus small, slender, the subtending apophyses subequal in length and size. Outer apophyses appearing as strong blackened blades, the tips narrowed into a stout black spine, these spines slightly divergent.

Habitat.—ARIZONA. *Holotype*: ♂, White Mountains, near Greer, 8400 feet, June 21, 1947 (C. P. Alexander).

Limnophila costata Coquillett (Psyche, 9: 149, 1901) was described from a single female specimen, collected by the late Professor T. D. A. Cockerell in the Hudsonian Zone of the range between the Pecos and Sapello Rivers, northwest of Las Vegas, New Mexico, at an altitude of about 11,000 feet, August 1-4, 1900. This is still known only from this unique type which

agrees with the present fly in the elongate vein Sc_1 and in other details of venation but differs in the coloration of the body, antennae, legs and wings.

Gonomyia (Idiocera) biacus new species

♂. Length about 5 mm.; wing 5 mm.

Allied to *coloradica* Alexander, differing chiefly in the structure of the male hypopygium. Outer or forked dististyle with the short lateral branch stout, oval in outline. Third dististyle a simple blackened rod, gradually narrowed to the acute gently curved tip. Inner dististyle with the outer spine small and but slightly developed. Aedeagus with the lateral apical spines very long and powerful, approximately four times as long as the central protruding penis-guard, the spines lying generally parallel to one another; setae along face of aedeagus relatively sparse and scattered. Particular attention is called to the differences in the third dististyle and the aedeagus.

Habitat.—ARIZONA. *Holotype*: ♂, Chiricahua Mts., along small stream below Rustler's Park, 7000 feet, June 5, 1942 (C. P. Alexander).

Gonomyia (Idiocera) sperryana new species

Size large (wing, male, 7 mm. or over); mesonotum gray, the praescutum with two narrow brown lines that diverge behind, extending over the scutal lobes; pleura conspicuously striped longitudinally with gray and yellow; knobs of halteres infuscated; femora yellow, darkened outwardly; wings whitish subhyaline, restrictedly patterned with brown; sternites yellow, with a broad sublateral black stripe, broken at the posterior borders of the segments; male hypopygium with the lobe of the basistyle obtuse at tip; outer dististyle with the branches very unequal, the outer a slender spine, the inner a broad triangular blade; second style a strong black rod, nearly parallel-sided, at tip narrowed into a short point; inner style dilated, the inner margin notched; apex of aedeagus simple, decurved.

♂. Length about 6–7 mm.; wing 7–8.2 mm.

♀. Length about 7.5 mm.; wing 8 mm.

Rostrum and palpi black. Antennae with scape yellow, pedicel and first flagellar segment pale basally, darkened at tips; remainder of flagellum black, the segments oval with short verticils. Head above yellow, the center of vertex darkened; posterior parts of head more brownish gray.

Pronotum gray medially, the sides and the pretergites light yellow. Mesonotum gray, the praescutum with two narrow brown lines that diverge behind, crossing the suture over the scutal lobes; humeral region restrictedly yellow; scutellum with a pair of brown spots; postnotum gray, the dorsal pleurotergite yellow, extended behind onto the sides of the mediotergite. Pleura dark gray, conspicuously striped longitudinally with light yellow, including the dorsopleural region and a more ventral stripe from the fore coxae to the abdomen; sternopleurite darkened. Halteres yellow, knobs infuscated. Legs with the fore and middle coxae light yellow, the posterior pair more obscure yellow; trochanters yellow; femora yellow, darkened at outer end, the extreme tip, in cases, slightly paler; tibiae brown, the tips and the tarsi black. Wings whitish subhyaline, restrictedly patterned with brown, including small spots at Sc_2 , origin of R_s , cord and outer fork of media; stigma infuscated; a brown wash in outer ends of cells R_3 and R_4 ; veins dark brown, Sc paler. Venation: Apical fusion of veins R_{1+2} and R_3 relatively extensive; $m-cu$ more than its own length before the fork of M .

Abdominal tergites dark brown, the caudal borders of the segments narrowly yellow, the lateral margins more narrowly so; pleural membrane yellow; sternites yellow, with a broad sublateral black stripe, broken at the posterior borders of the segments; hypopygium chiefly yellow. Male hypopygium with the outer lobe of basistyle relatively small, the apex obtuse, with long setae. Outer or branched dististyle with the arms very unequal, the outer one a slender spine, the inner a broad triangular blade; second style a strong black rod, nearly parallel-sided, at tip narrowed into a short point; third style a very weak pale rod, the shortest of the four styles or branches; inner style narrowed at base, dilated outwardly, the inner margin notched or

emarginate, forming a small basal lobe and a large outer blade. Apex of aedeagus simple, decurved.

Habitat.—ARIZONA. *Holotype*: ♂, Alpine, White Mountains, 8400 feet, June 23, 1947 (C. P. Alexander). *Allotopotype*: ♀. *Paratopotypes*: ♂♀ (Alexander and Sperry).

I take unusual pleasure in naming this fine species for the Sperrys, who collected part of the type series. This is by far the largest member of the subgenus in the Nearctic fauna. It is most similar to *Gonomyia (Idiocera) proserpina* Alexander, differing in the size and in the structure of the male hypopygium.

***Gonomyia (Gonomyia) filiformis* new species**

General coloration of mesonotum dark brownish gray; pleurotergite and pleura yellow, the latter restrictedly patterned with light brown; rostrum yellow; antennae black throughout; halteres elongate; wings long and narrow; *Sc* short, *Sc*₁ ending close to the origin of *Rs*; male hypopygium with the outer dististyle an elongate blackened club that is provided with abundant long black setae; inner dististyle with the usual spine weak and only feebly chitinized; aedeagus long and slender, the tip simple, slightly decurved; apophyses apparently lacking.

♂. Length about 5–5.2 mm.; wing 6.5–7 mm.

Rostrum yellow; palpi black. Antennae black throughout, relatively long; basal flagellar segments long-oval, the outer ones more slender and lengthened, subcylindrical, exceeding the verticils in length. Head above dark gray, yellow beneath.

Pronotum yellow, narrowly infuscated medially; pretergites light yellow. Mesonotal praescutum and scutum dark brownish gray, unpatterned; median region of scutum obscure yellow, the posterior parts of the lobes clearer yellow; scutellum brown, the posterior border broadly obscure yellow; mediotergite dark brown, pruinose, the sides and the pleurotergite yellow. Pleura yellow, restrictedly patterned with reddish brown or light brown on the anepisternum and ventral sternopleurite. Halteres elongate, stem yellow, knob infuscated. Legs with the coxae and trochanters yellow; femora and tibiae brownish yellow, the tips weakly darkened; tarsi passing into brownish black. Wings

long and narrow, grayish subhyaline, the prearcular field paler; stigma small, pale brown, scarcely evident; veins brown. Venation: Sc short, Sc_1 ending opposite or just beyond the origin of Rs , Sc_2 at its extreme tip; Rs a trifle longer than R_{2+3+4} ; $m-cu$ variable in position, from just before the fork of M to about opposite one-fifth the length of cell $1st M_2$.

Abdomen slender; tergites brown, the borders of the outer segments narrowly yellow; sternites obscure yellow; hypopygium yellow, the outer ends of the dististyles conspicuously blackened. Male hypopygium with the outer lobe of the basistyle relatively small, long-oval, with a fringe of strong setae on outer end. Outer dististyle an elongate darkened club that is provided with unusually numerous and conspicuous black setae. Inner dististyle erect, the usual spine weak, feebly chitinized and hence little evident, appressed to the main body of style, its tip narrowly obtuse; style terminating in two unequal fasciculate setae, its apex produced into an acute pale point. Aedeagus long and slender, the tip simple, slightly decurved; apophyses lacking or fused with the basal half of the aedeagus.

Habitat.—ARIZONA. *Holotype*: ♂, Greer, White Mountains, 8800 feet, June 22, 1947 (C. P. Alexander). *Paratopotypes*: Several ♂♂, June 21–22, 1947 (Alexander).

The most similar regional species is *Gonomyia (Gonomyia) filicauda* Alexander, which has the outer dististyle of the male hypopygium somewhat as in the present fly. The actual relationship between the two is probably not close since the structure of the aedeagus is quite distinct in the two flies.

Erioptera (Empeda) perflavens new species

General coloration reddish yellow; head above light gray; halteres and legs yellow; wings uniformly pale yellow, the veins pale; Sc_1 ending about opposite three-fifths the length of Rs ; male hypopygium with the outer dististyle unequally bifid, the outer arm longest.

♂. Length about 4.6–4.8 mm.; wing 5.4–5.5 mm.

Rostrum yellow; palpi brownish black. Antennae with the scape yellow, pedicel brownish black; basal flagellar segments

pale brown, the outer ones somewhat darker. Head with front yellow, the posterior part of head light gray.

General coloration of the entire thorax pale reddish yellow, unpatterned, the sparse vestiture pale. Halteres pale yellow. Legs yellow, the outer tarsal segments brownish black; legs with scattered dark setae and smaller pale linear scale-like setae. Wings uniformly pale yellow, the veins a trifle darker yellow, difficult to see against the ground. Venation: Sc_1 ending about opposite three-fifths the length of R_s , Sc_2 close to its tip; R_{2+3+4} about one-half longer than R_2 ; vein R_3 arcuated at origin, about half as long as R_4 ; petiole of cell M_3 subequal to the more sinuous $m-cu$, the latter shortly before or close to the fork of M .

Abdominal tergites brownish yellow, the sternites and hypopygium clearer yellow. Male hypopygium with the outer dististyle unequally bifid, the outer arm longest, gently curved on the outer third; inner blade shorter, expanded at apex into a triangular head, the inner apical angle somewhat more pointed. Inner dististyle a straight flattened blade, its apex obtusely rounded.

Habitat.—ARIZONA. *Holotype*: ♂, White Mountains, Coulter's Ranch, 9200 feet, June 24, 1948 (C. P. Alexander). *Paratopotypes*: 1 ♂, June 21, 1947 (C. P. Alexander); 2 ♂♂, 9200 feet, June 27, 1947 (John and Grace Sperry).

This species is entirely distinct from the other forms described from the United States. It more resembles certain Mexican species, such as *Erioptera (Empeda) tridentata* Alexander and *E. (E.) unidentata* Alexander, which have entirely different hypopygia.

Molophilus (Molophilus) stolidus new species

Belongs to the *plagiatus* group; general coloration black, heavily pruinose to appear gray; antennae short, black throughout; halteres with stem infuscated, knob white; legs with coxae gray, the remainder black; wings with a strong blackish tinge; vein *2nd A* gently sinuous; male hypopygium with the basal dististyle an elongate rod, the tip acute, before apex bearing a smaller acute spine.

♂. Length about 4–4.5 mm.; wing 4.5–5 mm.

♀. Length about 5 mm.; wing 4.5 mm.

Rostrum and palpi black. Antennae short, black throughout; flagellar segments oval, shorter than the verticils. Head black, heavily gray pruinose; anterior vertex broad.

Pronotum black; posterior edge of anterior pretergites restrictedly obscure yellow. Thorax almost uniformly dark gray, being pruinose over a black ground. Halteres with stem infuscated, knob white. Legs with the coxae gray; remainder of legs black. Wings with a strong blackish tinge, the prearcular field and the cells just beyond more whitened; veins darker brown. Venation: R_2 lying just beyond the level of $r-m$; petiole of cell M_3 varying from relatively short, about one-fourth longer than $m-cu$, to approximately twice the length of $m-cu$; vein 2nd A gently sinuous, ending about opposite the posterior end of $m-cu$.

Abdomen, including genitalia, black. Male hypopygium with the beak of the ventral lobe of the basistyle relatively deep; outer dististyle unequally bilobed. Basal dististyle distinctive, appearing as an elongate rod, the tip acute, before apex with a smaller acute spine; remainder of surface of outer half of style, especially the outer surface, with microscopic roughenings. Aedeagus long and slender.

Habitat.—ARIZONA. *Holotype*: ♂, on slide, White Mountains, Alpine, 8400 feet, June 22, 1947 (C. P. Alexander). *Allotopotype*: ♀, June 23, 1947. *Paratopotypes*: ♂♀, with the allotype (C. P. Alexander).

The most similar regional species is *Molophilus (Molophilus) arizonicus* Alexander, which differs conspicuously in the coloration of the body and legs and in the structure of the male hypopygium, particularly the basal dististyle.